

ABSTRACT

Fluorine-containing synthetic quartz glass is produced
5 by feeding silica-forming material, hydrogen, and oxygen
gases from a burner to a reaction zone, flame hydrolyzing
the silica-forming material in the reaction zone to form
particles of silica, depositing the silica particles on a
rotatable substrate in the reaction zone to form a porous
10 silica matrix, and heating and vitrifying the porous silica
matrix in a fluorine compound gas-containing atmosphere.
During formation of the porous silica matrix, the angle
between the center axes of the silica matrix and the silica-
forming reactant flame from the burner is adjusted to 90-
15 120° so that the porous silica matrix has a density of 0.1-
1.0 g/cm³ with a narrow distribution within 0.1 g/cm³. The
resulting quartz glass has a high transmittance to light in
the vacuum ultraviolet region below 200 nm.